

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application.

1-24. (Canceled)

25. (Currently amended) A medical system, comprising:

a patient-implantable device, comprising:

a housing;

a plurality of electrodes coupled to the housing and configured for sensing cardiac electrical activity and electrical activity having an origin other than a heart;

detection circuitry provided in the housing and coupled to at least some of the plurality of electrodes, the detection circuitry producing electrical signals in response to the sensed electrical activity and a cardiac electrical signal in response to the sensed cardiac electrical activity;

a sensor configured to sense movement of ~~[[a]]~~ the heart and produce a sensor signal in response to the sensed heart movement;

sensor circuitry provided in the housing and coupled to the sensor, the sensor circuitry configured to produce an audio signal in response to the sensor signal;

memory provided in the housing and coupled to the detection circuitry and sensor circuitry, the memory configured to store the audio signal and the cardiac electrical signal;

a controller provided in the housing and coupled to the memory, detection circuitry, and sensor circuitry, the controller configured to detect heart sounds from the audio signal, select the cardiac electrical signal from the electrical signals having an origin other than the heart based on temporal correlation of S1 heart sounds of the audio signal with QRS complexes of the cardiac electrical signal, discriminate between normal cardiac function and cardiac tachyarrhythmia based on the cardiac electrical signal and the audio signal, and provide an output based on the discrimination between normal cardiac function

and cardiac tachyarrhythmia, the controller configured to open a correlation window based on a cardiac cycle feature fiducial point of the cardiac electrical signal to correlate heart sounds with cardiac cycle features of the same heart beat over a plurality of cardiac cycles, and to discriminate between normal cardiac function and cardiac tachyarrhythmia based on temporal correlation between heart sounds and cardiac cycle features over the plurality of cardiac cycles; and

communications circuitry provided in the housing and coupled to the controller, the communications circuitry configured to telemeter the cardiac electrical signal and the audio signal; and

a patient-external device comprising:

patient-external communications circuitry configured to receive the cardiac electrical signal and the audio signal telemetered from the patient-implantable device;

a storage media to store the cardiac electrical signal and the audio signal telemetered from the patient-implantable device; and

a user interface coupled to the patient-external communications circuitry, the user interface configured for providing a visual output representative of the cardiac electrical signal and an audio output representative of the audio signal.

26-48. (Canceled)

49. (Previously presented) The medical system of claim 25, wherein discrimination between normal cardiac function and cardiac arrhythmia comprises discrimination between normal heart rate and arrhythmic heart rate, wherein:

the controller indicates the heart rate to be normal and the cardiac electrical signal subject to electrical noise if the cardiac electrical signal indicates high heart rate and the audio signal indicates normal heart sounds; and

the controller indicates the heart rate to be arrhythmic if the cardiac electrical signal indicates high heart rate and the audio signal indicates modified heart sounds.

50. (Previously presented) The medical system of claim 25, wherein:

the controller determines the cardiac function to be normal if the cardiac electrical signal indicates abnormal cardiac morphology and the audio signal indicates normal heart sounds; and

the controller determines the cardiac function to be arrhythmic if the cardiac electrical signal indicates abnormal cardiac morphology and the audio signal indicates modified heart sounds.

51. (Previously presented) The medical system of claim 25, wherein discrimination between normal cardiac function and cardiac arrhythmia comprises identification of electrical noise and wherein the controller indicates the presence of noise if the cardiac electrical signal indicates high heart rate and the audio signal indicates normal heart sounds.

52. (Previously presented) The medical system of claim 25, wherein discrimination between normal cardiac function and cardiac arrhythmia comprises discrimination between normal sinus rhythm and one or both of ventricular tachycardia and fibrillation based on temporal correlation of cardiac sound features of the audio signal with features of the cardiac electrical signal.

53-54. (Canceled)

55. (Previously presented) The medical system of claim 25, further comprising a human input, wherein production of the audio signal by the sensor circuitry is initiated based on triggering of the human input.

56. (Previously presented) The medical system of claim 25, wherein the output comprises transmission of an indication of the discrimination between normal cardiac function and cardiac arrhythmia by the communications circuitry to the patient-external communications circuitry and storage of the indication in memory.

57. (Previously presented) The medical system of claim 25, wherein the sensor is disposed on a lead connected to the patient-implantable device

58. (Previously presented) The medical system of claim 25, wherein the sensor is at least partially contained within the housing, and the housing and the plurality of electrodes form a rigid unitary structure.

59-65. (Canceled)